

1 VQE results Aer Estimator (With Shots)

(Full Hamiltonian)					Double Well	$\Lambda = 2$	COYBLA Max 10k Iterations				
Ansatz	Tolerance	Shots	Converged runs	Mean iter	VQE min E.	σ_{min}	Δ_{min}	VQE median E.	Δ_{median}	Exact	Time
RA r1 rl	1e-01	10000	100/100	28	3.5732e-01	2.4492e-04	8.2843e-05	3.7143e-01	1.4196e-02	3.5723e-01	00h 05m 08s
RA r1 rl	1e-02	10000	100/100	44	3.5723e-01	0e+00	4.4409e-16	3.5981e-01	2.5801e-03	-	00h 08m 02s
RA r1 rl	1e-03	10000	100/100	51	3.5723e-01	0e+00	4.4409e-16	3.5974e-01	2.5029e-03	-	00h 08m 23s
RA r1 rl	1e-04	10000	100/100	62	3.5723e-01	0e+00	4.4409e-16	3.5978e-01	2.5483e-03	-	00h 10m 13s
RA r1 rl	1e-05	10000	100/100	70	3.5723e-01	0e+00	4.4409e-16	3.61e-01	3.7647e-03	-	00h 11m 32s
RA r1 rl	1e-06	10000	100/100	81	3.5723e-01	0e+00	4.4409e-16	3.6063e-01	3.3978e-03	-	00h 13m 14s
RA r1 rl	1e-07	10000	100/100	87	3.5723e-01	0e+00	4.4409e-16	3.5984e-01	2.6039e-03	-	00h 14m 18s
RA r1 rl	1e-08	10000	100/100	96	3.5723e-01	0e+00	4.4409e-16	3.5995e-01	2.7175e-03	-	00h 15m 44s
Ansatz	Tolerance	Shots	Converged runs	Mean iter	VQE min E.	σ_{min}	Δ_{min}	VQE median E.	Δ_{median}	Exact	Time

Table 1